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Pacific Northwest Forest and Range Experiment Station

U.S. Forest Service RESEARCH NOTE

PNW-96 January 1969

THE MARKETING OF RED ALDER PULPWOOD AND SAW LOGS

PSW FOREST AND RANGE EXPERIMENT STATION
MAY 1 1969
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ABSTRACT

In the Pacific Northwest, red alder has invaded many cutover areas which once supported Douglas-fir. As the supply of red alder increased, more uses were found and red alder became more valuable. This Note measures the present red alder resource and summarizes its production, marketing, and future prospects.

Introduction

For many years, the old-growth Douglas-fir forests of the Pacific Northwest have been a major source of the Nation's timber supply. Since the end of World War II, efforts to renew these forests for a second crop of timber have been made on a significant scale in western Oregon and Washington. Many times, however, large areas of cutover land which once supported valuable stands of Douglas-fir had been invaded by less desirable species, principally red alder (*Alnus rubra*). Now, many forest managers are faced with deciding whether to manage alder or to convert those areas back to conifer production (the research staff in Production Economics at the Pacific Northwest Forest and Range Experiment Station is currently preparing economic guidelines to assist in these decisions). As background for this decision, this Note measures the extent of the problem and briefly describes the production and marketing of red alder.

Area and Volume of Alder Have Increased Considerably Since 1930's

Because it quickly becomes established under most conditions where mineral soil has been exposed by logging or fire, the red alder forest type has frequently replaced Douglas-fir, Sitka spruce, and western hemlock in the Douglas-fir subregion (Worthington et al. 1962). The results of a recent study based on 1931-33 survey standards--to account for changes in forest type definitions and survey techniques--suggest that the area in western Oregon in commercial hardwood types increased nearly fourfold in the last 35 years and is now 37-percent red alder. Even more spectacularly, in southwestern Washington, the area in commercial hardwood types increased sevenfold and is now 81-percent red alder. Today, about 2-1/2 million acres are in the red alder type (U.S.D.A. Forest Service 1965).

Over three-fourths of this red alder type is privately owned in western Oregon and western Washington, which reflects both the location of these stands and the history of their early cutting. However, only about two-thirds of the total regional growing-stock volume is on private lands.

Volume of red alder increased slowly from the early thirties to World War II and quite markedly from then on. Red alder sawtimber volume nearly doubled between 1953 and 1963 and made up nearly 60 percent of the total hardwood sawtimber volume but less than 3 percent of all sawtimber volume in the Douglas-fir subregion in 1963 (U.S.D.A. Forest Service 1958, Metcalf 1965). Although such figures might well have been influenced by changes in estimating techniques, this sharp rise must be presumed to be largely real.

The increase in the supply of merchantable red alder generated new uses for the species which increased its value. In turn, this opened a whole series of new and economically desirable opportunities in forest land management. Thus, evaluating the present and possible production techniques and markets for this species is a major concern of the forest manager.

Red Alder Timber Production Less Orderly Than Conifer Production

Unlike softwoods, red alder stumpage is not usually purchased directly by the primary manufacturer to be logged later by company crews or by a logging contractor. Instead, it is purchased by small-scale operators who switch back and forth between hardwood logging and softwood logging, relogging, and thinning. Part-time farmers produce most of the pulpwood with light, farm-type equipment, usually from their own or other nearby private lands. Both the farmers and small logging

operators switch to hardwoods more often because their primary activities become unprofitable or unseasonal than in response to any economic advantages for operating in hardwoods (Grobey 1964).

The preponderance of these relatively inefficient operators in alder logging has contributed to historically high logging costs for the industry. In addition, experience gained by the U.S. Forest Service Forestry Sciences Laboratory at Olympia, Washington, indicates that pulpwood logging costs for alder and Douglas-fir are about equal; but when it comes to logging for sawtimber, the operator can earn about 10 percent more per unit of time in Douglas-fir. The difference is due primarily to the added care that must be taken with alder, particularly the care required to prevent log breakage and splitting in felling operations.

Hardwood mill operators purchase stumpage and contract the logging more commonly now than in the past. This has encouraged some loggers to concentrate full time on red alder logging. Concurrently, there has been a trend toward larger sales of hardwood stumpage, particularly from public lands. Probably this change in sales policy has been both a cause and effect with respect to the trend in stumpage purchase policies of processors.

Stumpage Prices for Red Alder Vary Considerably

Information concerning stumpage prices for red alder or other hardwoods that grow in the Pacific Northwest is not as readily available as it is for softwoods. Until recently, there have been few strictly alder sales, particularly from public lands. When alder stumpage prices have been quoted, they have seldom been indicative of true market prices since, as a minor component of the sale, they have usually been somewhat arbitrarily estimated and the main concern has centered around Douglas-fir or other conifers. On the basis of informal observations, we estimate the ranges for red alder pulpwood and sawtimber to be, respectively, $1.50 to $7.50 per cord and $4.00 to $21.00 per thousand board feet.

Delivered Prices

Delivered prices for alder saw logs and pulpwood, on the other hand, have been reported for several years by the Oregon and Washington Agricultural Extension Services as well as by the Washington Department of Natural Resources. Saw-log prices have been running about $43 per thousand board feet but have ranged between $35 and $48 per thousand. These prices vary considerably from one locality to another and are directly related to the number of purchases and the milling capacity of the particular sale area. In 1962, median prices differed between localities in Washington by as much as $17 per thousand board feet, which appears to be more variation than can be explained by differences in factors such as grade and size (Grobey 1964). Saw-log prices reached a relative plateau by 1959 and rose only moderately between then and 1962 when another upward surge occurred. In comparison with Douglas-fir, however, sizable annual fluctuations have characterized alder saw-log prices.

Prices for delivered red alder pulpwood, in contrast to saw-log prices, have varied little from one mill to another or from one locality to another. For the Pacific Northwest as a whole, they averaged about $14.50 per cord and ranged from $13.50 to $17. Grobey (1964) observed that pulpwood prices in western Washington varied directly with the distance to the mill and that they were little influenced by other factors. He felt this was due both to the uniformity of quality in alder pulpwood from one cord to the next--which is in sharp contrast to the alder saw-log situation--and to the ability of the relatively few mills purchasing alder pulpwood to effectively administer the prices they paid. Alder pulpwood prices have been quite stable over time and have been characterized by no discernible trend in recent years.

Red Alder Output Has Been Increasing

The output of red alder from the forests of western Oregon and Washington has been increasing rapidly since the early fifties. Total output is now estimated at over 80 million board feet of saw logs and over a half-million cords of pulpwood (table 1). Minor quantities are also utilized for fuelwood, posts, and veneer logs.

Between 1953 and 1964, saw-log output increased seven times and pulpwood eight times. In terms of cubic volume, pulpwood has been the more important product for about 15 years. As a group, the minor products have declined. Veneer logs are an exception: although still insignificant in the total product mix, they appear to be increasing in importance.

The physical properties of red alder are generally desirable for lumber production. Although few accurate statistics are available, one study (Gill 1965) estimated that 93 percent of red alder lumber found its way into the furniture and fixtures industry in 1960. Another study (Bloch and Associates 1964) suggested that, although red alder contributes less than 1 percent to the total of all U.S. hardwood lumber production, a group of species with properties similar to red alder made up about one-third of that volume in 1962.[1/]

The rapidly increasing rate of consumption of red alder pulpwood by the woodpulp industry of the Pacific Northwest speaks for itself as to the suitability of this species as a raw material for this industry. Though the commercial pulping of this species has a relatively short history, Grobey (1964) estimated that nine out of the 17 pulpmills in

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1/ Maple, birch, beech, and the gums were included as species with physical properties similar to red alder, but, for some unknown reason, yellow poplar was omitted from this group.

Table 1.--*Estimated output of red alder in western Oregon and Washington, by major timber product group, 1951-65*[1/]

Year	Saw logs	Pulpwood[2/]	Fuelwood
	M bd. ft.	Cords	
1951	10,000	[3/]11,000	6,200
1952	11,000	[3/]31,000	5,300
1953	11,000	64,000	5,000
1954	18,800	98,000	5,100
1955	21,000	137,000	5,100
1956	33,000	175,000	4,100
1957	29,000	211,000	3,600
1958	31,000	226,000	3,600
1959	43,000	259,000	3,400
1960	47,000	295,000	3,300
1961	48,000	342,000	2,400
1962	48,000	381,000	(5/)
1963	66,000	462,000	(5/)
1964	[4/]79,000	518,000	(5/)
1965	82,000	(5/)	(5/)

1/ Estimated by the authors on the basis of:

a. Data available from unpublished sources,
b. U.S. Bureau of the Census' Current Industrial Reports,
c. Western Wood Products Association's Statistical Year Book,
d. State of Washington Department of Natural Resources annual timber harvest reports, and
e. Other miscellaneous published sources.

2/ Includes a small amount of mill residues.

3/ Does not include estimates for Oregon.

4/ Ivan Bloch and Associates estimated in 1964 that the market for red alder lumber was from 120 million to 140 million board feet annually, thus indicating the estimates shown here are on the conservative side.

5/ Not available.

western Washington were pulping local hardwoods, mostly alder. Seven of these mills were judged to be using substantial quantities of alder. Although pulpwood users compete with the lumber industry for alder, they also provide a ready market for low-grade lumber materials that might be undesirable at a particular time.

Most alder is being pulped by the standard sulfate and sulfite processes, but a portion is being manufactured by the relatively new neutral sulfite semichemical process (Worthington et al. 1962). It has also been demonstrated that it is feasible to pulp red alder by the conventional mechanical processes plus the groundwood and chemigroundwood processes. Because certain final products are improved when a soft hardwood such as red alder is added to a softwood pulp, hardwood pulp will probably be regarded in the future as an essential--as well as an available and inexpensive--ingredient for papermaking.

The Market Outlook for Red Alder Is Bright

Future markets for red alder logs and stumpage will depend on how the final products manufactured from lumber and woodpulp fare in broader national and world markets.

The paper products and dry pulp (including dissolving pulps) produced in western Oregon and Washington, wholly or partially from red alder, are in direct competition with similar products from throughout the world. There is a relative advantage in transportation costs from the Pacific Northwest to the areas of rapidly growing consumption on the west coast.

We can anticipate expanding markets for pulp and paper products in the entire Pacific Rim. Vigorous competition can be expected from other regions and other countries during the next decade or two, but a significant share of these markets will still be served by pulp and paper products containing red alder. In the subsequent 10- to 20-year period, however, competition may be expected to increase in the Pacific Rim as other nations in a position to serve the area develop their pulping capacities.

The outlook for red alder lumber markets appears a little less certain, but the potential for market expansion and earnings may be even greater than for alder's use for pulp and paper products. At the present time, it is estimated that about half of all red alder lumber production finds its way into California markets--most of it eventually going into the rapidly developing southern California furniture industry. Here, alder encounters stiff price competition from eastern hardwoods which have been the traditional source of supply for the whole furniture industry. Fragmentary evidence indicates that, in the past, California buyers of alder have vacillated between it and eastern woods

as small shifts have occurred in the delicately balanced price ratios between the two sources of lumber, with tropical hardwoods remaining a distinct threat.

There have been recent increases in the prices of eastern hardwoods and improvements in the organization of hardwood marketing in the Pacific Northwest. As a result, the alder lumber and wood products industry has stabilized; this, along with the continuing high rate of economic growth throughout the west coast, makes the outlook quite promising. Prospects for successful invasion of markets farther east or of the international markets of the Pacific Rim, however, appear quite unlikely. In the case of the latter markets, locally grown hardwoods are plentiful and have a definite price advantage. In fact, alder lumber is likely to encounter increased competition from foreign hardwoods throughout its current marketing area, even including the west coast. This suggests that the red alder lumber industry should continue to work toward a goal of price stabilization by insuring a more dependable supply of its members' products.

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